

J. R. Hamilton,

Check Valve,

N^o 83,848,

Patented Nov. 10, 1868.

Fig. 1.

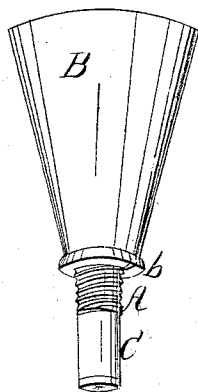


Fig. 4.

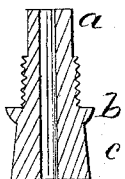


Fig. 5.



Fig. 2.

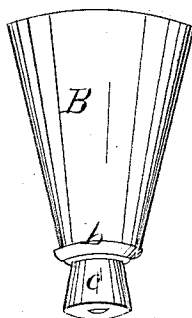
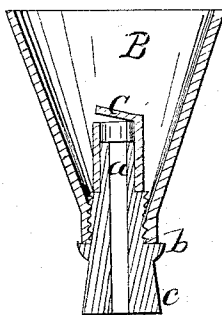


Fig. 3.



Witnesses;

orator
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J. R. HAMILTON, M. D., OF DEXTER, MAINE.

Letters Patent No. 83,848, dated November 10, 1868.

IMPROVEMENT IN VALVES AT THE ENDS OF TUBES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. R. HAMILTON, M. D., of Dexter, in the county of Penobscot, and State of Maine, have invented a new and useful Improvement in Valves and Valve-Holders, for surgical and other instruments; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the drawings accompanying this specification, and forming a part of the same, and to the figures and letters thereon, in which—

Figures 1 and 2 represent perspective views of my apparatus.

Figure 3, a vertical section of fig. 2.

Figure 4, a vertical section of the valve-holder.

Figure 5, a vertical section of the valve.

My invention relates to an improvement in valves and valve-holders, which is adapted to a great variety of purposes, such as for surgical instruments, breast and stomach-pumps, cupping-glasses, cow-milkers, air and other pumps; in short, it may be used wherever liquids or gases are to be passed through tubes. It is very simple in its construction, easily made and applied, not liable to get out of order, has no wearing-surfaces, and makes a most perfect air and water-tight valve.

In order that others may be enabled to make and use my improved valve and valve-holder, I will proceed to particularly describe it.

A, fig. 1, is the valve-holder, inserted in the lower end of the pipe or funnel B, and having the valve C on its lower end, in which position liquids or gases would be permitted to pass downwards only, the valve C instantly closing by the contraction of its fibres when the pressure is removed.

This valve-holder A is made of any suitable material, and is shown in section at figs. 3 and 4. The end at *a* is made cylindrical, for nearly one-third of the whole length, to receive upon it the ring or open end of the valve C, and below this it is made somewhat larger, and a screw-thread is cut upon its surface, to retain the end of the pipe or funnel B, as shown in figs. 2 and 3.

Below this screw-thread is a flange, *b*, extending around the holder, to prevent the funnel or tube from going on too far, and the lower end, at *c*, is made the

lower frustum of a cone, the base being downward as shown in the different figures. This is for the purpose of receiving and retaining the end of the pipe funnel firmly upon it, when in the position represented at fig. 1.

A hole is drilled through the valve-holder longitudinally, so as to admit of the free passage of liquids or gases.

The valve C, as constructed, is a hollow India-rubber tube, first made with one end closed. An incision then made, a short distance below the inner surface of the closed end, with a sharp instrument, so as to leave about one-third of the inner surface of the tube intact. The incision is continued back externally, diminishing in depth, leaving the fibres gradually thick on each side. The valve thus constructed admits fluids or gases passing through it by the extension and contraction of its fibres, and always remaining closed when no force is acting on it.

I am aware that valves have been constructed similar in appearance to that above described. However critical philosophical examination of its structure, shows it to be unique in this particular, that when perfectly it acts in all positions, irrespective of its weight, construction counteracting the force of gravity. Being made of partially-vulcanized India rubber, the contractility inhering in the material corresponds to the muscular or vital force that governs the valves of the human heart.

The manner in which it is constructed, and the force inhering in the material, (to which no claim is made apart from the precise construction,) makes it, for necessity, an accurate, sensitive, and reliable valve.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The valve C, formed by the partial excision of the closed end of a hollow cylinder, substantially as described, and for the purposes herein set forth.

2. The valve-holder, combined and arranged with the foregoing, as and for the purposes specified.

J. R. HAMILTON, M. D.

Witnesses:

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J. B. WOODRUFF.